AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A computerized method for providing an optimization solution, said method comprising:

for a process to be executed on a computer, wherein is defined a linear functional form $y = f(X,c)$, where X comprises a set of independent variables $X = \{x_1,...x_n\}$, c comprises a set of functional parameters $c = \{c_1,...c_n\}$, and y comprises a dependent variable, where the independent variables set X is partitioned into two subsets, X_1 and X_2, receiving data for said process;

populating said data into a min-max model, as executed by a processor on said computer;

minimizing y with respect to X_1;

maximizing y with respect to X_2, subject to a set of constraints, wherein said maximizing y comprises a global optimum for said process; and

sending said global optimum to at least one of a display device, a printer, and a memory.

2. (Original) The method according to claim 1, further comprising:

reformulating said process as a sequence of linear minimization problems.

3. (Original) The method according to claim 2, further comprising:

generating new constraints to refine the problem formulation for said maximizing.

4. (Original) The method according to claim 3, wherein the method iteratively adds and manages the newly generated constraints to reoptimize the problem to global optimality.

5. (Currently amended) An apparatus for calculating a global optimization to a minimum-maximum problem, said apparatus comprising:

a receiver to receive data related to said minimum-maximum problem, for populating a min-max model;

a first calculator, as executed by a processor on said apparatus, to provide a plurality of minimum values of the min-max model;

a second calculator, as executed by said processor, to locate a global optimum value, given said plurality of minimum values; and

a transmission port to send said global optimum to at least one of a display device, a printer, and a memory.

6. (Original) The apparatus of claim 5, wherein at least one of said first calculator and said second calculator comprises a linear programming solver.

7. (Previously presented) The apparatus of claim 5, wherein:

said receiver comprises a memory interface to access a memory containing data; and

a third calculator to convert the data accessed from said memory into a data structure appropriate for said first calculator and said second calculator and thereby populating said min-max model.

8. (Currently amended) A system comprising:

a memory containing data appropriate to a minimum-maximum problem; and

an apparatus comprising:

a first calculator to provide a plurality of minimum values of said minimum-maximum problem data; and

a second calculator to locate a global optimum value, given said plurality of minimum values, said global optimum value being sent to at least one of a display device, a printer and a memory device.

9. (Previously presented) A computer program product tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform a method for providing an optimization solution, said method comprising:

for a process, wherein is defined a linear functional form $y = f(X,c)$, where X comprises a set of independent variables $X = \{x_1, ... x_n\}$, c comprises a set of functional parameters $c = \{c_1, ... c_n\}$, and y comprises a dependent variable, where the independent variables set X is partitioned into two subsets, X_1 and X_2, receiving data for said process;

populating a min-max model with said data;

minimizing y with respect to X_1;

maximizing y with respect to X_2, subject to a set of constraints, wherein said maximizing y comprises a global optimum; and

sending said global optimum to at least one of a display device, a printer, and a memory.

10. (Previously presented) The computer program product according to claim 9, said method further comprising:

reformulating said process as a sequence of linear minimization problems.

11. (Previously presented) The computer program product according to claim 10, said method further comprising:

generating new constraints to refine the problem formulation for said maximizing.

12. (Previously presented) The computer program product according to claim 11, wherein the method iteratively adds and manages the newly generated constraints to reoptimize the problem to global optimality.

13. (Previously presented) A computer-implemented method, comprising at least one of:

for a process, wherein is defined a linear functional form $y = f(X,c)$, where X comprises a set of independent variables $X = \{x_1,...x_n\}$, c comprises a set of functional parameters $c = \{c_1,...c_n\}$, and y comprises a dependent variable, where the independent variables set X is partitioned into two subsets, X_1 and X_2, receiving data for said process for a computerized calculation to find a global maximum for said process, said calculation minimizing y with respect to X_1 and maximizing y with respect to X_2, subject to a set of constraints, wherein said maximizing y locates a global optimum for said process, and sending said global optimum to at least one of a display device, a printer, and a memory;

providing a data for said process, said data to be used in said computerized calculation for said global optimum;

receiving a result from said computerized calculation;

providing one or more software modules for said computerized calculation; and

developing one or more software modules for said computerized calculation.

14. (Currently amended) A computerized tool for providing a global solution to a minimum-maximum problem, said tool comprising:

a computer having at least one processor and connected to a memory;

a linear programming solver, as executed by a processor on said computer, to calculate a periphery of a polyhedron representing a region of all points that satisfy a linear constraint in a minimum-maximum problem;

a calculator, as executed by said processor, to determine which point on said periphery provides a global solution to said minimum-maximum problem; and

a transmitter to send said global solution to at least one of a display device, a printer, and [[a]] said memory.

15. (Original) The computerized tool of claim 14, wherein said linear constraint is $A_{12}x_1+A_{21}x_2 \leq b_{12}$, where A_{12}, A_{21} are sub-matrices and b_{12} is a vector, and data is provided for a function $y = f(x,c) = c_1x_1 + c_2x_2$, where x is a set of independent variables $x = \{x_1,x_2\}$, x_1 and x_2 are subsets of x, $c = \{c_1,c_2\}$ is a set of functional parameters, partitioned into two subsets c_1 and c_2, and y is a dependent variable, said minimum-maximum problem to minimize (over x_2) the maximum (over x_1) of y, subject to said linear constraint.

16. (Original) The computer tool of claim 14, further comprising:

a data converter to fit data from a database into a data structure to populate a model for said minimum-maximum problem.

17. (Original) The computer tool of claim 14, further comprising:

a linear programming solver to determine a sensitivity vector C that defines an efficiency between said minimum and maximum parameters.

18. (Canceled)

19. (Original) The computer tool of claim 17, further comprising:

a calculator to determine which point on said periphery provides a global solution to said minimum-maximum problem, using said sensitivity vector C.

20. (Previously presented) The computer tool of claim 19, further comprising:

a calculator to calculate a 1-polar cut to divide said polyhedron into two regions and to determine which of said two regions said global solution lies, using said sensitivity vector C.

21. (Previously presented) The computerized method of claim 1, wherein said process comprises one of an optimal solution for a:

design of toleranced parts in a manufacturing;

procurement;

product distribution;

supplier/vender availability or distribution;

securities portfolio management;

portfolio selection; and

health care problem.